DOCKET FILE COPY ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 101 of the	)	WT Docket No. 00-19
Commission's Rules to Streamline	)	
Processing of Microwave Applications in	)	
the Wireless Telecommunications Services	)	
	)	
Telecommunications Industry Association	)	
Petition for Rulemaking	)	RM-9418
	)	

To: The Commission

REPLY COMMENTS

ALCATEL USA, INC.

Robert J. Miller
Gardere & Wynne, L.L.P.
1601 Elm Street, Suite 3000
Dallas, Texas 75201
(214) 999-3000
Its Attorney

August 3, 2000

TABLE OF CONTENTS

SUMMARY

Based upon the comments filed in response to the captioned Memorandum Opinion and Order and Notice of Proposed Rule Making, the Commission must:

- Adopt the proposed 23 GHz Band (i.e., 21.2-23.6 GHz band) wideband and narrowband channelization for the fixed point-to-point terrestrial microwave radio service ("FS").
- Adopt the proposed 23 GHz Band 1 bps/Hz spectrum efficiency and 0.001% frequency tolerance standards.
- Adopt the proposed 23 GHz Band low-power limited coverage rules.
- Adopt standards permitting smaller diameter 23 GHz Band and 10 GHz Band (i.e., 10.55-10.68 GHz band) antennas.
- Withdraw the proposed elimination of antenna linear polarization standards.
- Aggressively pursue negotiations with the National Telecommunications and Information Administration to implement blanket 23 GHz Band conditional licensing.
- Adopt Local Multipoint Distribution System equipment self-verification and other proposed technical criteria.
- Conclude that auctioning site-by-site FS bands is contrary to the public interest and should not be implemented.
- Promptly initiate a rulemaking for digital operations in support of High Definition Television.

Taking these actions clearly would provide needed spectrum for public safety, utility and broadband services and would establish uniform operating standards to ensure spectrally efficient, economical, and state-of-the-art equipment. Alcatel USA, Inc., a leading manufacturer of FS and other equipment critical to universal deployment

of broadband wireless services, thus urges the Commission to respond to the strong consensus reflected in the comments.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 101 of the	)	WT Docket No. 00-19
Commission's Rules to Streamline	)	
Processing of Microwave Applications in	)	
the Wireless Telecommunications Services	)	
	)	
Telecommunications Industry Association	)	
Petition for Rulemaking	)	RM-9418
	)	

To: The Commission

REPLY COMMENTS

In the above-captioned Memorandum Opinion and Order and Notice of Proposed Rule Making, 15 FCC Rcd 3129 (2000) ("NPRM"), the Commission proposes significant changes to the Part 101 rules governing the fixed point-to-point terrestrial microwave radio service ("FS"). These proposals primarily involve changes designed to facilitate more efficient, productive use of the 21.2-23.6 GHz band ("23 GHz Band"); improve access to the 10.55-10.68 GHz band ("10 GHz Band"); and promote flexibility in Local Multipoint Distribution Service ("LMDS") operating and technical rules.

Pursuant to Section 1.415 of the Commission's Rules,[1] Alcatel USA, Inc. ("Alcatel"),[2] by its attorney, hereby replies to the comments[3] submitted on the NPRM.[4] As detailed herein, the record of this proceeding reflects the following positions:

- 23 GHz Band frequency plan -- Adoption of the proposed 23 GHz Band frequency plan is widely supported and must be adopted. This plan will permit more efficient use of the 23 GHz Band. It will encourage use by wireless communications networks that need short-hop microwave links to interconnect with switching offices and the telephone network, to support the increased number of systems being used for wireless Internet access, and to ease the expansion of private microwave networks for voice and data transmission.

- 23 GHz Band operating criteria -- Adoption of the proposed 23 GHz Band 1 bps/Hz spectrum efficiency and 0.001% frequency tolerance standards to accommodate increasing digital operations generally are supported and must be adopted. Some parties express concern that these rules are inappropriately biased against ongoing analog operations. These fears are unjustified because existing and proposed transition provisions will protect such operations.

- Low power 23 GHz Band operations -- Adoption of rules designating an additional 200 MHz of the 23 GHz Band for low power operations and revising various technical requirements for these operations generally was supported. These changes, which would relieve congestion and improve operational efficiencies, must be adopted.

---

[1] 47 C.F.R. §1.415 (2000).

[2] Alcatel is a wholly-owned subsidiary of Alcatel, N.V., one of the world's largest corporations and the world's largest manufacturer and supplier of telecommunications equipment, including FS radios. Alcatel's equipment is used for a wide range of services, including short, medium and long-haul voice, video and data transmission. Its customers include all the Bell Operating Companies, most major independent telephone companies, cellular operators, power and other utility companies, oil companies, railroads, industrial companies, and state and local government agencies.

[3] A list of the parties submitting comments, and the abbreviations used herein to reference such comments, is set forth in Attachment A hereto.

[4] 65 FR 38333 (June 20, 2000).

- Antenna standards -- Adoption of the proposed antenna standards, so that 1-foot antennas could be used in the 23 GHz Band and 2-foot antennas could be used in the 10 GHz Band, was unanimous. In addition, the record favors the corollary proposals to reduce mainbeam gain and sidelobe suppression and to increase beamwidth. Thus, these proposals must be adopted.

- Antenna polarization -- Elimination of horizontal and vertical antenna polarization standards was opposed unanimously. Since this change would result in inefficient spectrum utilization, it must be rejected.

- 23 GHz Band conditional licensing -- Prompt implementation of blanket 23 GHz Band conditional licensing was supported unanimously. It would allow more efficient operations by providing FS users greater flexibility in coordinating/consolidating construction projects and initiating service rapidly. Parties strongly encourage the Commission and the National Telecommunications Information Administration ("NTIA") to negotiate seriously towards achieving appropriate coordination procedures so 23 GHz Band conditional licensing could be implemented. Until blanket conditional licensing is established, or as an alternative thereto, several parties support Commission action that, at a minimum, would make such licensing permissible for all operations in that band that do not exceed a 55 dBm effective radiated power ("ERP").

- LMDS technical rules -- Widespread support exists for adoption of various suggested changes to LMDS operating and technical requirements. Permitting manufacturer verification of LMDS radios is unanimously approved because it would expedite product roll-out without compromising interference protection safeguards. Several parties agree with Alcatel's suggestion that the 1 MHz bandwidth used to measure out-of-band emissions for digital radios under Section 101.111(a)(2)(ii) of the Commission's rules (including those used in the LMDS) is not required to include any of the authorized channel bandwidth being tested. These proposals must be adopted.

- Spectrum auctions -- All parties strongly oppose auctioning FS frequencies. They agree that it is the wrong method for authorizing systems consisting of one or more RF links, for authorizing individual links to complete existing systems, and for authorizing systems in shared bands (i.e., FS and satellite). Moreover, concern exists that the Commission inappropriately is using its mandate to implement auctions as a tactic for transitioning FS users from site-to-site licensing to

geographic-area licensing. Based upon this record, FS site-by-site links must not be auctioned.

- Part 74 FS digital standards -- Various parties encourage the Commission to initiate a rulemaking for digital transmissions over Part 74 broadcast FS facilities to support High Definition Television ("HDTV") development. Without these rules, the studio-to-transmitter ("STL") links critical for HDTV could not be operated.

THE RECORD CLEARLY SUPPORTS ADOPTION OF THE PROPOSED 23 GHz BAND FREQUENCY PLAN AND ASSOCIATED TECHNICAL STANDARDS

Optimizing FS use of the 23 GHz Band is in the public interest. Its suitability for medium or high-capacity, short range systems, which serve as an essential backbone to evolving broadband technologies, make this band a viable alternative to the increasingly congested 6 GHz, 11 GHz, and 18 GHz bands for FS users.

A. 23 GHz Band Channel Plan Must Be Adopted

In the NPRM, the Commission proposes a 50 MHz channel plan for the 23 GHz Band.[5] It would consist of 50, 40, 30, 20, 10, 5 and 2.5 MHz wideband and narrowband channels.[6]

The record of this proceeding clearly indicates that significant additional "user friendly" FS spectrum is needed and that this channel plan must be adopted because it meets this objective.[7] Winstar supports the proposed plan because it "will permit

---

[5]NPRM, 15 FCC Rcd at 3161-3162.

[6]Id.

[7]Giganet proposed adding 12.5 and 25 MHz channels. Giganet at 4. Alcatel opposes this suggested revision to its channel plan. Using non-integral bandwidths, like 12.5 MHz and 25 MHz, would result in more difficult frequency coordination and fragmentation of the spectrum. Adding 12.5

more efficient use of this band, as well as encourag[e] more use of the band for short-haul [FS] users."[8] Comsearch concurs, stating that the proposed plan will enable operators to "license narrower channels for lower capacity links" and "will also encourage the development of more spectrally efficient radios to use the narrower channel widths."[9]

B. Operating Criteria

In the NPRM, the Commission proposes adoption of several operational changes to improve efficient use of the 23 GHz Band.[10] These changes include revisions to the Section 101.107 frequency tolerance and the Section 101.141 spectrum efficiency specifications.[11] Overwhelming record support exists for those changes and therefore they must be adopted.

MHz and 25 MHz bandwidth channels to the plan is unnecessary. Manufacturers requiring other bandwidths should coordinate the next largest channel bandwidth (e.g., a radio requiring 25 MHz of bandwidth should be coordinated in a 30 MHz channel). Telenetics/SMI and Consolidated propose a change that would allow exceptions to the 1200 MHz transmit-receive frequency pairing in cases of frequency congestion. Telenetics/SMI at 7; Consolidated at 1. Alcatel supports a rule allowing non-standard frequency pairing if a technical reason is included with the licensed application stating why the standard pairs cannot be used. The Commission currently allows non-standard frequency pairs to be used, provided that a technical reason is included in the FCC Form 601 license application. This procedure has been in effect for many years in the lower frequency bands (e.g., 5.925-6.425 GHz, 10.7-11.7 GHz). Technical reasons include frequency congestion, 2A-B intermodulation interference between different transmitters on the same microwave path, or non-equal channel bandwidths in the transmit and receive directions of transmission. A video system may have non-equal channel bandwidths in each direction of transmission (e.g., 30 MHz downstream for the video feed and 10 MHz upstream for telemetry data). This would result in a non-standard frequency pair.

[8]Winstar at 8 (footnote omitted). See also FWCC at 6-8; NSMA at 6-7; API at 11.

[9]Comsearch at 4.

[10]NPRM, 15 FCC Rcd at 3161-62.

[11]Id.

1. Frequency Tolerance.

Under Section 101.107, the frequency tolerance specification for the 23 GHz Band is 0.03%, which assumes analog production and coordination based upon full 50 MHz channelization.[12] The Commission proposed institution of a 0.001% standard.[13]

The record reflects that the current 0.03% specification clearly is outdated because FS radio manufacturers are licensing digital radios in this band, which occupy at least 75% of the channel bandwidth.[14] A tighter frequency tolerance standard (i.e., the proposed 0.001% instead of the current relaxed 0.03% standard) is needed to avoid excessive frequency drift into adjacent channels if the band is divided, as proposed, into bandwidths of 50, 40, 30, 20, 10, 5 and 2.5 MHz.[15] Frequency stability would improve from a drift up to 7 MHz with the current 0.03% standard to a drift of only 0.23 MHz with the proposed 0.001% standard.[16] Such an "improved stability requirement is necessary with the implementation of new frequency plans using channels as narrow as 2.5 MHz."[17] The proposed standard is essential to optimizing spectral efficiency in this band.[18]

---

[12]Alcatel at 11.

[13]NPRM, 15 FCC Rcd at 3162.

[14]NSMA at 8-9; FWCC at 8-9; Alcatel at 12; Consolidated at 1-2.

[15]Id.

[16]Comsearch at 5; Giganet at 4.

[17]Comsearch at 5.

[18]Comsearch at 5; NSMA at 9; FWCC at 9; Consolidated at 3; Giganet at 4.

Reduced consumer costs and increased manufacturer flexibility also would result with adoption of this specification.[19] Since most FS manufacturers design a family of radios for various frequency bands using common components and operating specifications, standardizing technical criteria, such as the 0.001% frequency tolerance requirement, essentially would allow the same radio to be used in different bands.[20] For example, the 0.001% frequency tolerance is used for other narrowband radio applications, particularly in the 18 GHz band.[21]

2. Spectrum Efficiency.

The 23 GHz Band is without a spectrum efficiency requirement. To fill this gap, the Commission proposed revising Section 101.141(a) to specify a 1 bps/Hz efficiency rate for the 23 GHz Band.[22] Like the proposed frequency tolerance change, support for this spectrum efficiency requirement was well-established in the comments.

The proposed spectrum efficiency standard is appropriate for existing and contemplated equipment. According to Giganet, "the current state of the art easily supports this level of spectral efficiency.[23] Comsearch agrees:

> Even using rather simple modulation schemes such as 4 FSK and 4 QAM/QPSK, digital radios can meet the proposed spectrum efficiency standard of 1 bps/Hz. Meeting this standard should present no difficulty

---

[19]Alcatel at 12-13; NSMA at 9; FWCC at 9.

[20]Alcatel at 12-13; NSMA at 9; FWCC at 9.

[21]Id.

[22]NPRM, 15 FCC Rcd at 3162.

[23]Giganet at 4. See also Winstar at 8; Alcatel at 13-15; FWCC at 10-11; NSMA at 9-10.

to the equipment manufacturers and will certainly result in more efficient use of the spectrum.[24]

Another reason for adopting the proposed spectrum efficiency standard is that it currently is used in all frequency bands below 19.7 GHz band and in the 24 GHz (24.25-25.25 GHz) DEMS band. Adoption of this standard thus would maximize spectrum utilization and facilitate manufacturing economies of scale."[25]

3. Transition Period.

Implementation of the new channel plan and the corresponding technical standards would impact FS equipment manufacturers and users. To ensure a smooth transition, the Commission established grandfathering provisions in Section 101.4 of its rules.[26]

Further clarification of how transition to compliance with certain Part 101 operating and technical standards still is needed, however. The Commission supplied such clarification in the NPRM. First, the "grandfathering" provision appropriately has been clarified to be effective "indefinitely."[27] Similarly, for the proposed changes to

---

[24]Comsearch at 5.

[25]NSMA at 9-10; FWCC at 10-11; Alcatel at 13-15. The proposed 1 bps/Hz standard is the minimum required spectrum efficiency requirement in these bands. Some bands have greater spectrum efficiency requirements than the minimum. For example, the spectrum efficiency rules for the 3700-4200, 5925-6425, 6525-6875, 10550-10680, and 10700-11700 MHz bands are stated in Section 101.141(a)(3) of the Commission's rules.

[26]Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, Report and Order, WT Docket No. 94-148, 11 FCC Rcd 13449, 13477-78 (1996), recon., Memorandum Opinion and Order, 15 FCC Rcd 3129 (2000) ("Part 101 Order"). In the Part 101 Order, the Commission established Section 101.4, which sets forth a transition plan whereby FS licenses in effect as of July 31, 1996, could continue operating under Part 21 or Part 94 after Part 101 became effective. Id.

[27]NPRM, 15 FCC Rcd at 3147.

the 23 GHz Band, to minimize any adverse impact that the new rules would have on existing system licensees and on equipment manufacturers once they do become effective, the Commission proposed additional transition procedures.

Manufacturers would have an 18-month transition period before being required to meet applicable new frequency tolerance, spectrum efficiency, or other standards.[28] In addition, within 24 months after the new rules become effective, users would be required to meet those technical requirements for new installations, but the proposed new antenna standards would be effective only when the new rules become effective.[29] Under this 24-month transition procedure, FS stations applied for or licensed by the end of the transition period would be grandfathered indefinitely under the current rules, provided that these systems do not cause harmful interference to other licensees.[30]

These proposed improvements to the transition plan are supported generally and should be adopted without change.[31] The limited concerns discussed below, while reasonable, do not necessitate any substantive changes to the proposed transition plan.

First, API, which generally supports the proposed 23 GHz Band channelization and technical rule revisions, "cautions ... against making such tighter standards

---

[28] Id., 15 FCC Rcd at 3160 n.191.

[29] Id.

[30] Id.

[31] NSMA at 5 n.10; FWCC at 6 n.10; Alcatel at 7 n.12.

universally applicable ... until manufacturers have had adequate time to develop and introduce equipment that is capable of meeting the new standards."[32] API recommends a "transition period of at least several years" to allow licensees and users adequate time to continue using their existing equipment and to "indefinitely grandfather non-compliant systems that have been licensed before the end of the transition period."[33] The Commission's proposed changes to Section 101.4 are fully responsive to these concerns. Specific, reasonably timed compliance deadlines are proposed and all systems licensed before the deadlines would be grandfathered "indefinitely."

Telenetics/SMI articulated a more generic concern over what they perceive to be an unreasonable forced migration from analog to digital operations:

> Adoption of the proposals would drive up costs substantially and could force all systems to digital operation. Marketplace forces are at work that will eventually make digital operation cost-effective for all applications, but it is currently not cost-effective in many instances, and it is premature to force that result by regulation.[34]

Moreover, they claim that the frequency tolerance and spectrum efficiency requirements would require discontinuance of analog product lines and initiation of digital products, which "would at least triple the price of the customer's product solution" and "would drive many existing users out of the market...."[35]

---

[32]API at 11.

[33]Id. at 12.

[34]Telenetics/SMI at 1.

[35]Id. at 2.

These concerns are without merit. Frequency tolerance of 0.03% is unacceptable because significant drift of up to +/-7 MHz in the 23 GHz Band would occur.[36] There are thousands of analog video transmitters licensed in the 17.1-19.7 GHz band ("18 GHz Band") which meet a frequency tolerance of 0.001%. These systems are used for wireless cable television distribution. Since radio equipment in the 18 GHz Band and the 23 GHz Band normally uses common components, there is no technical reason to adopt a looser frequency tolerance standard for the 23 GHz Band. The Commission should adopt the proposed 0.001% frequency tolerance for the 23 GHz Band. The proposed rules will grandfather licensed systems in the 23 GHz Band with 0.03% frequency tolerance, but will not allow new systems to be installed after the transition period, unless they meet the new frequency tolerance standard. The 0.001% standard for analog video must not be compromised.[37]

ACCOMMODATION MUST BE MADE FOR 23 GHZ BAND LOW POWER OPERATIONS

The 23 GHz Band frequencies set aside for lower power, limited coverage systems, are severely congested. Designation of an additional 200 MHz for these low power operations is proposed in the NPRM.[38]

---

[36]See p. 6, supra.

[37]*In addition, certain parties, in their comments, propose rules designed to address these* concerns. They suggested that analog systems should be required only to use a licensed video channel with necessary bandwidth instead of always using a 50 MHz channel. Alcatel at 11; NSMA at 7 n.15; FWCC at 8 n.15.

[38]NPRM, 15 FCC Rcd at 3162-63.

Most commenters support providing an additional 200 MHz for low power operations. Many users employ low power systems "in and around circumscribed areas" and "additional spectrum at 23 GHz could be useful for such purposes, particularly as the lower spectrum bands become increasingly congested and/or redesignated for other uses."[39] Winstar also supports this approach, but "cautions that the adoption of this proposal would reduce by two, from 20 to 18, the number of frequencies eligible for high power operations" and recommends against designating additional spectrum for low power use.[40]

Comsearch opposes making the extra 200 MHz available for low power operations:

> Assuming that the Commission adopts the proposed changes to the antenna standards in 101.115, any system would be allowed to use 1 foot antennas (meeting the Category B radiation pattern requirements) on any channel in the 23 GHz band. Thus designating additional channels for low power limited coverage systems would serve little purpose. According to the proposed 101.147(s)(8), there would be a 24 month period from the effective date of the rules when antennas that did not meet Category B but had a beamwidth of less than 4° and a front-to-back ratio of at least 38 dB could be used on the channels designated for low power limited coverage systems. We believe that use of these antennas should be limited to the present four channels (i.e. 21.8-22.0 GHz and 23.0-23.2 GHz). The reported congestion on these channels is often the result of self-interference caused by the operators' own poor antenna patterns. If congestion is encountered on these four channel pairs, operators could use any other 23 GHz channel as long as they would use at least 1 foot diameter antennas meeting Category B. Indeed the congestion is a signal that they *should* use better antennas. The need to designate additional channels is eliminated by the changes to the

---

[39]API at 13. See also Telenetics/SMI at 6.

[40]Winstar at 8.

> 101.115 antenna pattern requirements. Furthermore, the 23 GHz environment has become significantly more congested in some areas.... In this environment, designating additional channels for systems that use substandard antennas does not appear to be an appropriate course of action.[41]

The concerns expressed by Comsearch are well-taken. Licensees should take every measure available to optimize efficient spectrum management, including the elimination of "poor antenna patterns." Moreover, during the transition period, the antenna standards for the new 200 MHz of low power spectrum should not be loosened (i.e., the standards should remain the same as the current high power standards). Otherwise, it will be more difficult to frequency coordinate this part of the band in the future. However, such improved operation is not a panacea for frequency congestion. The record still demonstrates that a need exists for the 200 MHz in low power 23 GHz Band frequencies, and Alcatel supports designation of this additional capacity.

Besides this additional 200 MHz of spectrum, specific technical changes are proposed for 23 GHz Band low power licensees. These changes include: (a) clarifying the maximum power standard from a 55 dBm ERP to a 55 dBm EIRP because EIRP (not ERP) is the appropriate measurement for fixed, rather than mobile, operations; (b) revising the frequency tolerance standard from 0.03% to 0.001% to ensure conformity for all shared services in the band; (c) deleting as outdated "showing of need" if a license application requests a 50 MHz bandwidth channel or more than five

---

[41]Comsearch at 5-6.

(5) hops in tandem; (d) eliminating unique interference protection criteria because the standard for 23 GHz Band full power operation is adequate; and (e) permitting a 1-foot diameter antenna throughout the band.[42] These technical changes were unopposed and should be adopted.[43]

UNANIMOUS SUPPORT EXISTS FOR THE PROPOSED 23 GHz BAND AND 10 GHz BAND ANTENNA STANDARD MODIFICATIONS

To meet the needs of the PCS and other wireless users deploying systems nationwide and to comply with local zoning and other land use requirements, the Commission proposes amending its rules to allow smaller antennas in the 23 GHz Band and in the 10 GHz Band.[44] Further changes to the minimum antenna gain, maximum beamwidth and front-to-back ratios for these smaller-diameter antennas also are proposed.[45] Complete support exists for all these changes and thus they must be adopted.

Giganet favors the smaller size antennas because they "will be appropriate for short (*i.e.*, one-to-two miles) microcell interconnect and LMDS infrastructure point-to-

---

[42] Id.

[43] Comsearch at 6-8; Alcatel at 16-18; FWCC at 12-14; Telenetics/SMI at 7; Giganet at 5.

[44] NPRM, 15 FCC Rcd at 3164. For the 23 GHz Band, a 0.46 meter (18-inch) diameter for Category A antennas or a 0.30 meter (1-foot) diameter for Category B antennas would be permitted instead of the current 0.61 meter (2-foot) minimum prescribed in Sections 101.115 and 101.147(s) of the Commission's rules. NPRM, 15 FCC Rcd at 3164. Similarly, for the 10 GHz Band, a 0.61 (2-foot) diameter antenna, instead of the current minimum 1.22 meter (4-foot) diameter, would be permitted. Id. at 3164-65.

[45] Id., 15 FCC Rcd at 3164.

point microwave paths."[46] Telenetics/SMI advocate these new standards "as this change would make microwave technology available to some users who are now precluded by physical size restrictions at their locations."[47] Comsearch states that "the ability to use smaller antennas is in the public interest as it will promote increased usage of the 10 and 23 GHz bands in areas where these frequencies are underutilized."[48]

The parties also recognize that other technical parameters must be changed to achieve more widespread access to the 23 GHz and 10 GHz Bands. For example, Giganet declared that, for the 23 GHz Band, it supports

> the proposal to change the minimum antenna gain from 38 dBi to 33.5 dBi, and to change the maximum beamwidth from 2.2 to 3.3 degrees. While these levels might result in slightly wider mainbeam beamwidths, the adoption at the same time of a new channel plan with much narrower bandwidths will on balance produce far greater spectral efficiencies. Consequently, the use of slightly less efficient antennas is warranted, particularly where the smaller size of these antennas is consistent with lower costs and easier, faster installation.[49]

Comsearch concurs:

> The modifications that are necessary are reduced mainbeam gain, increased beamwidth, and reduced sidelobe suppression requirements. Increasing the beamwidth and reducing the sidelobe suppression requirements are changes that would, assuming a constant EIRP, increase the interference potential of a station. Therefore, the benefit to users that results from using smaller antennas must be weighed against the

---

[46]Giganet at 5.

[47]Telenetics/SMI at 7.

[48]Comsearch at 8.

[49]Giganet at 5. See also Telenetics/SMI at 7.

possible harm to the interference environment. Counterbalancing the reduced sidelobe suppression requirements is the proposal to significantly tighten the Category B front-to-back ratio requirements.

* * * * *

The coordination industry is faced with an increasingly congested interference environment. Thus we are very concerned about the danger that the larger beamwidth and poorer sidelobe suppression of the smaller diameter antennas will result in increased interference. On balance, we support the proposed modifications to the antenna pattern requirements. The benefits of smaller antennas in terms of aesthetics and structure loading are undeniable. We believe that the overall increase in interference potential that results from the proposed changes should be relatively minor and that improving the Category B pattern requirements from 100° to 180° as proposed is of great benefit in reducing the potential for interference.[50]

ANTENNA LINEAR POLARIZATION SPECIFICATIONS MUST BE RETAINED

Pursuant to Section 101.117 of the Commission's rules, "[u]nless otherwise allowed, only linear polarization (horizontal or vertical) shall be used."[51] The Commission, in the NPRM, proposes to remove the words "horizontal or vertical," which would allow systems with rotated linear polarization.[52] It justifies this proposal by concluding that "strict horizontal or vertical polarization is improbable for most billboard passive reflectors that we authorize."[53]

---

[50]Comsearch at 6-7.

[51]47 C.F.R. § 101.117 (2000).

[52]NPRM, 15 FCC Rcd at 3154.

[53]Id.

No support exists for this proposal. In fact, the only party addressing this issue, API, expresses its "concern that permitting rotated linear polarization on a widespread basis will create unnecessary coordination difficulties and threaten harmful interference to other licensed operations."[54]

Indeed, elimination of the vertical and horizontal ("V&H") linear polarization requirement would be disastrous and must not be implemented. Abandonment of linear V&H requirements, and authorization of other polarization types, such as circular or elliptical, in these bands would lead to increased interference.

Requiring V&H linear polarization has greatly facilitated efficient spectrum utilization. This result has been accomplished by increasing the density of FS systems licensed to operate in various designated bands by enabling engineers to take advantage of the benefits of cross polarization.

This requirement should be continued, but relaxed somewhat for area-licensed point-to-multipoint systems. Some small amount of depolarization may occur, even on linear point-to-point microwave transmissions, sometimes requiring minor rotational adjustment of a receiving antenna at the time of installation to obtain optimum performance. When the same antenna is used for both transmitting and receiving, which is typically the case, this produces a small offset in the polarization of the transmitted signal from one of the point-to-point stations. This procedure has worked

---

[54]API at 8.

well under the existing rules, which require either vertical or horizontal linear transmitter polarization.

Area licensed point-to-multipoint systems typically communicate with numerous subscriber stations. These stations may or may not have line of sight access to the hub, where passive reflectors may be intentionally incorporated to extend coverage. With this type of system, a greater degree of depolarization may be expected in some cases. Therefore, in the situation of area licensed point-to-multipoint subscriber stations, strict adherence to V&H transmission requirements by subscriber stations may be counterproductive and some deviation on a station-by-station basis may be appropriate. Maintaining hub station V&H requirements, however, is essential although it may be appropriate for subscriber stations to operate on a linear polarization somewhat offset from V or H in order to optimize performance.[55]

23 GHz BAND CONDITIONAL LICENSING MUST BE PERMITTED

Timely availability of FS systems is essential to ensure that broadband technologies reach the widest possible marketplace. Conditional licensing is necessary for increased access to, and quick deployment in, the 23 GHz Band.

---

[55]In addition, the Commission should craft its regulations to minimize the impact of intentionally misaligned subscriber transmitter antennas on adjacent area licensee hub receivers. In this regard, limited (less than 45 degrees) intentional misalignment of subscriber station transmitter antennas to optimize communications with the intended hub receiver may tend to lessen interference to unintended hub station receivers which are strictly following a V&H alignment pattern.

Inexplicably, the Commission has refused to pursue reaching the requisite agreement with NTIA to institute 23 GHz Band conditional licensing.[56] Such inaction is not condoned in the record. Unequivocal support for aggressively seeking such an agreement with NTIA is expressed throughout the comments, compelling the Commission promptly to pursue such negotiations until successful completion.

Giganet accurately details the rationale for adopting blanket 23 GHz Band conditional licensing:

> Manufacturers ... as well as customers are harmed by the time delays inherent in the current licensing process. This delay is due to the requirement for closed-door frequency coordination imposed by the Federal Government. Conditional licensing has been working successfully in other fixed microwave frequency bands because frequency coordination based on publicly available license databases is a highly reliable process. The Federal Government refuses to share its 23 GHz database with commercial frequency managers, and thereby imposes delays on commercial users, even though we believe the Federal Government accounts for only a small percentage of 23 GHz licensed links.
>
> *****
>
> With existing procedures, commercial and local government 23 GHz users are deprived of immediate access, except on the four designated frequency pairs, because of the Federal Government's refusal to share frequency coordination data with the private sector. This is exactly the opposite of a fair sharing of burdens. Instead, we suggest that the Federal Government use of 23 GHz should be limited to four channel pairs, and the remainder of the band should be available for immediate conditional licensing by commercial users.
>
> *****

---

[56] NPRM, 15 FCC Rcd at 3158-60.